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Some molecular phylogenetic and taxonomical remarks on the *Gnophini* of Turkey, with faunistical notes (*Lepidoptera*, *Geometridae*, *Ennominae*)

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Abstract: Some molecular phylogenetic and taxonomical remarks on the *Gnophini* of Turkey, with faunistical notes (*Lepidoptera*, *Geometridae*, *Ennominae*). *Misc. Pap.* 172: 1-15, 1 fig.

In this paper, three genera of *Gnophini* in Turkey, *Charissa*, *Gnophos*, and *Odontognophos* are discussed from taxonomical, molecular and faunistical standpoints. Totally 37 species are reported from Turkey. Two species are recorded here as new to the *Lepidoptera* fauna of Turkey.

Keywords: *Lepidoptera*, *Geometridae*, *Ennominae*, *Gnophini*, taxonomy, phylogeny, fauna, Turkey.

Introduction

In order to understand better the faunistic structure of the *Lepidoptera* of Turkey, intensive researches have been carrying out by the authors during the last decades, under the project entitled “*Lepidoptera* of Turkey (LTR)”². Most of the faunistic studies carried out for this purpose have already been published. The last ten selected from among the many are as follows; Kemal, Koçak & Uçak (2018); Kemal & Koçak (2016, 2018a-c, 2017a-c); Kemal, Kızıldağ & Koçak (2018a-b). Four taxonomical papers on *Pyralidae*, *Oecophoridae*, and *Geometridae* were published recently (Kemal & Koçak, 2017d-e; Kemal, *et al.*, 2018; Kemal & Uçak, 2018). Besides, Kemal, Koçak & Uçak (2017) reported some *Charissa* (= *Hyposcotis*) spp. from Dağlıca (Hakkari Pr.). Seven (2018) reported several faunistical records of *Gnophini* species from South-East Turkey. Some records especially from East Turkey are based upon the images mentioned in the Bold Systems. However, their DNA barcodes or their collecting labels cannot be accessible.

The present paper comprises 37 species of the genera *Charissa*, *Gnophos* and *Odontognophos* of Turkey. Two species are new for the *Lepidoptera* fauna of Turkey. Many provincial records are also new. The original references, synonyms, and brief distributional information are added to each species. The range is mainly based upon the Info-system of the Cesa³.

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² <https://www.researchgate.net/project/Lepidoptera-of-Turkey-LTR>

³ <http://www.cesa-tr.org/Infos.htm> The database information of the authors is private; therefore publicly inaccessible.

Material and Method

Molecular analysis

The processes made before obtained genomic DNA from the dry legs of the specimens, as well as gDNA of *Charissa* was extracted using RED Extract-N-Amp Tissue PCR Kit (Sigma, St. Louis, MO, USA) according to Kemal et al. (2018). The PCR amplifications of mtCOI sequences were performed with LepF1 and LepR1 primers. Purification and sequencing of PCR products was performed by Macrogen (Netherlands). Obtained sequences aligned and evaluation other close taxa by MEGA7 (Kumar, Stecher & Tamura, 2016). Phylogenetic relationships were determined by maximum likelihood and Bayesian inference analyses. The maximum likelihood analysis was conducted using RAxML-Blackbox on XSEDE by CIPRES Science Gateway website (http://www.phylo.org/sub_sections/portal). The Bayesian inference analysis was performed with MrBayes v3.2.3 (Ronquist & Huelsenbeck, 2003).

Gnophini material

The *Gnophini* specimens were collected by the authors from various parts of Turkey not only in the past, but also in this year. They were prepared and labelled in the museum standard. All the collected specimens are currently preserved in the Cesa Collection⁴.

Their morphological identifications are mostly based upon the genitalic structures. The specimens, belonging to 22 species, are mentioned in the following text.

Results

Molecular phylogenetic evaluations

In the tree of the Bayesian Interference (BI) and the Maximum Likelihood (ML) illustrated together (Fig.1), basing upon the mtCOI gene sequences of some *Charissa* and *Gnophos* species of the Genbank and Bold Systems (Ratnasingham, S. & P.D.N. Hebert, 2007), publicly available. The mtCOI gene sequences of two *Charissa dubitaria* populations from Van Province (1,2) and of an unknown species of *Charissa* from Anamur (İçel Province) are also included and evaluated here. The results are mentioned below briefly.

1. About the identities of two populations of *Charissa dubitaria*-1 & *Charissa dubitaria*-2 versus *Charissa pseudodubitaria*. *Charissa pseudodubitaria* is an apparently unpublished name of a species from Israel and Iran. The two populations of *dubitaria* specifically same, but different from *pseudodubitaria*. The tree supports the locations of both taxa in a sister position.
2. Two populations of *Charissa dubitaria* from Van and the populations of *Charissa dubitaria staudingeri* are the members of the same major clade, but placed in different subclades. Some authors consider *dubitaria* and *staudingeri* as conspecific and different at subspecific level. The tree under discussion doesnot support this opinion. Moreover, *staudingeri* in a sister position with *assoi* and *corsica* (see also taxonomical evaluation below).
3. Status of *Charissa* sp. n.
This taxon appears as a species of *Charissa* morphologically. Even though, it seems to have abandoned its own genus; in other words, it conglomerates superficially with an unrelated species, i.e., *Gnophos sartatus*. In brief, the *Charissa* taxon is a distinct, apparently new species. Moreover, it may belong to a distinct genus. The tree supports clearly this argument.

⁴ <http://grbio.org/cool/eaaz-xyfc> <http://grbio.org/cool/d36c-mrxe>

4. Status of the genus *Gnophos* Tr.

In this genus, the morphological and molecular data donot seem to be compatible. There is a chaotic situation that is not easy to explain. At the same time, the affinity between *sartatus* and *#furvatus* (type-species) is also an issue of controversial.

5. Status of *Charissa mutilata*

The *mutilata* populations mentioned in the tree are clearly close to each other. However, the *mutilata* population is so close to *peloponnesaria* that falls human doubt. The next two populations of *mutilata* seems to be different species. The present tree supports this opinion.

6. Status of *Charissa certhiata* in Turkey

From the molecular standpoint, there is no discrepancy between *certhiata* and other related species. However, some populations of *certhiata* in East Turkey must be studied morphologically, molecular assisted.

7. Status of *Neognophina* in Turkey

The subgenus was established by Wehrli (1951) with the type-species *Gnophos intermedia* Wrli. Currently, two species of the subgenus, *supinaria* and *intermedia* are represented in the Balkans, both currently unknown from Turkey. The sole species of the subgenus, occuring in Turkey is *pfeifferi*. There is also an unidentified population of *Neognophina* from South Turkey. The members of this subgenus need more morphological and molecular studies in future.

8. Status of *Odontognophos dumetata*

Wehrli (1951) established *Odontognophos* as a district genus from *Gnophos* Treitscke with the type-species *Gnophos dumetata*, described by Treitschke (1827), by using the morphological features of the adult, as well as the early stages of this insect. Some authors follow Wehrli's argument, others donot take this into account. In the Lepiforum, the species *dumetata* is placed in the genus *Gnophos* Treitschke (1825). The genus *Gnophos* is represented by the type-species *#Geometra furvata* [Denis & Schiffermüller], 1775. In the tree (Fig.1), the location, where these two taxa placed are very far from each other. Therefore, *furvatus* and *dumetatus* arenot congeneric, and this argument is strongly supported by the tree illustrated. On the other hand, *dumetata* is closer to *mutilata* and allied species, currently represented by the subgenus *Cnestrognophos*. It means that there is an incompatible case from the morphological and molecular standpoints. Under these circumstances, new evaluations are necessary, based upon more new data. Finally, it can be said that *Charissa* and *Gnophos* are not monophletics, and this case play an important role on this problematic matter.

9. Status of Outgroup

Synaphe and *Sitochroa* are the generic members of the family *Pyrilidae* and *Crambidae* in the superfamily *Pyraloidea*. These families and *Geometridae* are well established different taxonomic groups under two different superfamilies, *Pyraloidea* and *Geometroidea*, respectively. In the present study, *Synaphe* and *Sitochroa* were selected as outgroup for the *Gnophini* tree. *Sitochroa* is seen in the tree at the correct position. However, *Synaphe* and *Charissa* approach to each other unexpectedly. The reason of this discrepancy may be the existence of a large number of taxa, still undescribed, or the morphological characters, used in definition of the related family group taxa, cannot sufficiently represent during molecular analyses. This is not a defense, but a comment (See also remark no 8).

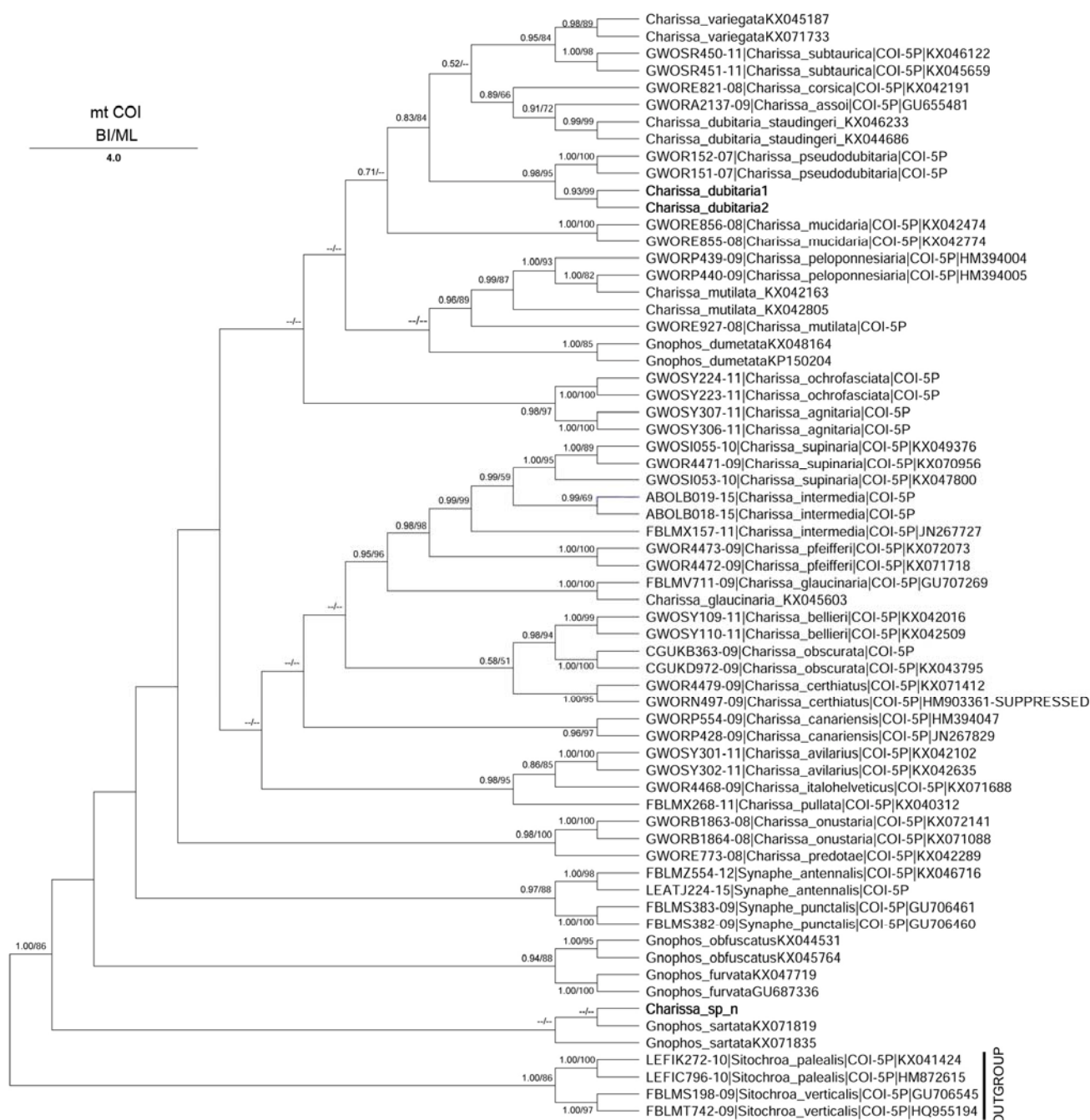


Fig. 1 - Maximum-likelihood (ML) and Bayesian inference (BI) analyses based on mt COI gene sequences of some *Charissa* and *Gnophos* species (*Ennominae*, *Geometridae*).

The new sequences in the presented tree are indicated in bold. Posterior probabilities of Bayesian inference (BI) and bootstrap values of maximum likelihood (ML) are presented on each interior branch. Dashes denote a value showing less than half of the full posterior probability or bootstrap value. For the position of the outgroup in the tree, see remark no 9.

Taxonomical evaluations

By taking the remark no.2 into consideration mentioned above, we propose here the taxon *staudingeri* as a distinct species in the genus *Charissa*, near *assoi* and *corsica*. *Charissa staudingeri* (Wnukowsky,1929) (**stat.n.**) is currently considered as a subspecies of *Charissa dubitaria* (Stgr.) (Lepiforum, latest access on 13 April,2018).

An unnamed *Charissa* species from Anamur is discussed above (remark no.3). For its precise identification further morphological researches, molecular assisted, will be carried out in the near future.

In this paper, three genera, *Charissa*, *Gnophos*, and *Odontognophos* are studied by the authors for the first time. According to the remarks (no 4, 8), all these genera are incompatible from not only the morphological, but also molecular standpoints. While this is the case, on the existing subgeneric classification and about its nomenclature, there are, nevertheless, some important points that need to be expressed.

The following subgenera of the genus *Charissa* are currently known in Turkey. These are: *Cnestrognophos*, *Euchrognophos* (= *Hyposcotis*), *Kemtrognophos*, *Neognophina*, *Organognophos*, *Rhopalognophos*, and *Charissa* s.str. The genus *Gnophos* is represented in Turkey by three subgenera: *Dicrognophos*, *Sacrognophos*, and *Gnophos* s.str. Finally, the genus *Odontognophos* has no subgenus.

Taxonomical synopsis of the *Gnophini* of Turkey and adjacent countries are given below:
The symbol # denotes nomenclaturally unavailable name.

***Gnophini* Duponchel, [1845]**

Gnophites Duponchel, [1845], Cat. Méth. Lépid. Eur.: 226-227. Type-genus: *Gnophos* Tr.

***Charissa* Curtis, 1826**

The subgeneric division of this genus was proposed by Wehrli (1951, 1953). They are mentioned below in alphabetical order (see also Koçak & Kemal, 2015):

Charissa (Cnestrognophos) Wehrli, 1951 Original reference: *Gnophos (Cnestrognophos)* Wehrli, 1951, Lambillionea 51: 26. Type-species: *Gnophos praeacutaria* Wehrli, 1922, by original designation. Synonyms: *Cnestrognophos* Wehrli, 1951; *Cnestrognophos* Wehrli, 1953

Charissa (Costignophos) Wehrli, 1951 Original reference: *Gnophos (Costignophos)* Wehrli, 1951, Lambillionea 51: 23. Type-species: *Geometra pullata* [Denis & Schiffermüller], 1775, by original designation. Synonym: *Costignophos* Wehrli, 1951

Charissa (Dysgnophos) Wehrli, 1951 Original reference: *Gnophos (Dysgnophos)* Wehrli, 1951, Lambillionea 51: 23. Type-species: *Gnophos difficilis* Alpheraky, 1883, by original designation. Synonym: *Dysgnophos* Wehrli, 1951

Charissa (Euchrognophos) Wehrli, 1951 Original reference: *Gnophos (Euchrognophos)* Wehrli, 1951, Lambillionea 51: 25. Type-species: *Gnophos variegata* Duponchel, 1830, by original designation. Synonyms: *Hyposcotis* Hübner, [1825]; *Euchrognophos* Wehrli, 1951; *Euchrognophos* Wehrli, 1953 (The priority belongs to *Hyposcotis* Hübner, [1825]).

Charissa (Kemtrognophos) Wehrli, 1951 Original reference: *Gnophos (Kemtrognophos)* Wehrli, 1951, Lambillionea 51: 11. Type-species: *Gnophos onustaria* Herrich-Schäffer, [1852], by original designation. Synonyms: *Kemtrognophos* Wehrli, 1951; #*Kemtrognophos* Wehrli, 1951

Charissa (Neognophina) Wehrli, 1946 Original reference: *Gnophos (Neognophina)* Wehrli, 1946, Revue fr. Lépid. 10: 241. Type-species: *Gnophos intermedia* Wehrli, 1917, by original designation. Synonyms: *Neognophina* Wehrli, 1946; *Neognophina* Wehrli, 1951; *Neognophina* Wehrli, 1953
(For previous taxonomical arrangement of this group, see: Wehrli (1921).

Charissa (Organognophos) Wehrli, 1951 Original reference: *Gnophos (Organognophos)* Wehrli, 1951, Lambillionea 51: 24. Type-species: *Gnophos sibirata* Guenée, 1857, by original designation. Synonyms: *Organognophos* Wehrli, 1951; *Organognophos* Wehrli, 1953

Charissa (Rhopalognophos) Wehrli, 1951 Original reference: *Gnophos (Rhopalognophos)* Wehrli, 1951, Lambillionea 51: 24. Type-species: *Geometra glaucinaria* Hübner, [1799], by original designation. Synonyms: *Rhopalognophos* Wehrli, 1951; *Rhopalognophos* Wehrli, 1953

***Charissa* (s.str.) Curtis, 1826**

Original reference: *Charissa* Curtis, 1826, Br. Ent. 3: pl. 105. Type-species: #*Geometra obscurata* [Denis & Schiffermüller], 1775, Ankündigung syst. Werkes Schmett. Wienergegend: 108. Type(s): [Austria]: Vienna district [nomen nudum]. Synonym: *Charissa* Curtis, 1826

Charissa (Trilobignophos) Wehrli, 1951 Original reference: *Gnophos (Trilobignophos)* Wehrli, 1951, Lambillionea 51: 23. Type-species: *Gnophos pollinaria* Christoph, 1887, by original designation. Synonyms: *Trilobignophos* Wehrli, 1951; *Trilobignophos* Wehrli, 1953

Gnophos Treitschke, 1825

Original reference: *Gnophos Treitschke, 1825*, [in] Ochseneheimer, Schmett. Eur. 5 (2): 432. Type-species: *#Geometra furvata* [Denis & Schiffermüller], 1775, [nomen nudum], by subsequent designation by Duponchel, 1829 [in] Godart & Duponchel, Hist. Nat. Lépid. Papillons Fr. 7 (2): 110.
Synonym: *Gnophos Treitschke, 1825*

Gnophos (Dicrognophos) Wehrli, 1951 Original reference: *Gnophos (Dicrognophos) Wehrli, 1951*, Lambillionea 51: 10. Type-species: *Gnophos orthogonia* Wehrli, 1939, Mitt. münch. ent. Ges. 29: 72, by original designation. Synonym: *Dicrognophos Wehrli, 1951*

Gnophos (Sacroglyphos) Wehrli, 1951

Original reference: *Gnophos (Sacroglyphos) Wehrli, 1951*, Lambillionea 51: 11. Type-species: *Gnophos sacraria* Staudinger, [1895], by original designation.
Synonym: *Sacroglyphos Wehrli, 1951*

Gnophos (s.str.) Treitschke, 1825

Original reference: *Gnophos Treitschke, 1825*, [in] Ochseneheimer, Schmett. Eur. 5 (2): 432. Type-species: *#Geometra furvata* [Denis & Schiffermüller], 1775, [nomen nudum], by subsequent designation by Duponchel, 1829 [in] Godart & Duponchel, Hist. Nat. Lépid. Papillons Fr. 7 (2): 110.
Synonym: *Gnophos Treitschke, 1825*

Odontognophos Wehrli, 1951

Original reference: *Odontognophos Wehrli, 1951*, Lambillionea 51: 29. Type-species: *Gnophos dumetata* Treitschke, 1827, by original designation.
Synonym: *Odontognophos Wehrli, 1951*

Faunistical evaluations

Below, 37 species from Turkey are mentioned. Among them, two species are reported here as new for the fauna of Turkey.

1. *Charissa (Cnestrognophos) adjectaria* (Staudinger, [1898])

Original reference: *Gnophos adjectaria* Staudinger, [1898], Dt. Ent. Z., Iris 10: 312-314, Taf. iv fig. 35. Syntypes 4♂2♀: "Jordanthal".

Synonym: *adjectaria* Staudinger, [1898]

Range: Turkmenistan, Uzbekistan, Israel, Turkey (Batman) (Seven, 2018).

2. *Charissa (Cnestrognophos) anthina* Wehrli, 1953

Original reference: *Gnophos (Rhipignophos) anthina* Wehrli, 1953, [in] Seitz, A., Die Gross-Schmett. Erde 4 (Suppl.): 612, Fig. 49i. Type: [Azerbaijan]: "Ordubad, gegen 1600m" leg. Rjabov (ZIN, St Petersburg).

Synonym: *anthina* Wehrli, 1953

Range: North Turkey (Bolu? [Özdemir, 2007]; Erzurum), Azerbaijan (Arax valley (Ordubad)) (Bold Systems).

3. *Charissa (Cnestrognophos) libanotica* (Wehrli, 1931)

Original reference: *Gnophos libanotica* Wehrli, 1931, Mitt. münch. ent. Ges. 21: 45. Syntypes 10♂: Libanon: Bscharre, leg. E. Pfeiffer (ZSM).

Synonym: *libanotica* Wehrli, 1931

Range: Lebanon, Caucasus countries, Turkey (Antalya, Siirt, Van).

Material examined: 1♂. Antalya Pr. (Kohu Mt.), GP746♂, A. Koçak leg. & prep. 1985.

4. *Charissa (Cnestrognophos) luticiliata* (Christoph, 1887)

Original reference: *Gnophos luticiliatus* Christoph, 1887, [in] Romanoff, Mém. lépid. 3: 100-101, pl. v fig. 3. Type ♂: [Turkmenistan]: "Askhabad".

Synonym: *luticiliatus* Christoph, 1887

Range: Middle East countries, Turkey (Van [present record]), North Iran, Turkmenistan.

Material examined: 2♂. Van Pr. Bahçesaray, Upper Mukus Valley 1800m (65Am2) 10.v.2016, GP2349, GP2938; 1♀. Same place 1840m (64Am4), 3.vi.2016; 5♂♀, same place 5.viii.2016, GP2937♂; 1♂. Same place, 10.vi.2016, all by M. Kemal & A. Koçak leg.

Remarks: The illustrated male genitalia (GP2349♂) of the unnamed specimen from Van (Bahcesaray) (Kemal & Koçak, 2016: fig.43) was kindly identified by Erlacher (pers. comm. in 2016) as *lusiciliata* Chr.

New for the fauna of Turkey.

5. *Charissa (Cnestrognophos) mutilata* (Staudinger, 1879)

Original reference: *Gnophos mutilata* Staudinger, 1879, Horae Soc. ent. ross. 14: 457. Type ♂: [Türkei]: Amasia (Johann leg.).

Synonym: *mutilata* Staudinger, 1879

Range: Turkey (Amasya, Ankara, Bolu, Elazığ, Erzurum, Konya, Malatya, Kahramanmaraş, Mardin, Niğde, Sivas, Trabzon, Van), Caucasus countries.

Material examined: 26♂♀. **Malatya** Pr., Beydağı NP 1190m (44Lc), 25-28.iv.2015, GP2930♀, GP2931♂, GP2943♂; 1♂. Malatya Pr., Darende, Beybağı 1200m (44Ei), 30.viii.2017, GP2940♂; 1♂. **Van** Pr., Çatak, Saklıvadi (65Df), 25.vii.2016, GP2844♂; 1♂, Van Pr., Edremit, Elmalık (65Le) 25.viii.2017, GP2920♂; 5♂. **Bitlis** Pr., Adilcevaz, Süphan Mt. Kızdağı 2560m (13Ac1), 19.viii.2017, GP2941♂, all by M.Kemal & A.Koçak leg.

6. *Charissa (Cnestrognophos) rjabovi* Wehrli, 1939

Original reference: *Gnophos rjabovi* Wehrli, 1939, Mitt. münch. ent. Ges. 29(1): 77. Holotype 1♂: [Azerbaidjan]: Ordubad, 1600-1700m.

Synonym: *rjabovi* Wehrli, 1939

Range: Turkey (Erzurum, Van [present record]), Caucasus countries, Arax valley, Iran.

Material examined: 2♂. **Van** Pr., Tuşba, Ağartı, Gören Mt. 1950m (65Np2), 25.v.2014; 2♂, Bahcesaray, Upper Mukus Valley 1800m, (65Am2), 10.v.2016, GP2350♂; 2♂, same district, Upper Mukus Valley 1840m (65Am4), 25.v.2016; 1♂, same place (65Am4) 10.vi.2016; 16♂3♀, same district and place, 3.vi.2016; 3♂, same district, Upper Mukus Valley 1760m (65Am1), 12.vi.2016; 14♂♀, Bahcesaray, Krapet Pass 3000m (65Abc) 16.vii.2017; 6♂♀, Çatak, Saklıvadi 2030m (65Df) 25.vi.2017, all by M.Kemal & A.Koçak leg.

7. *Charissa (Euchrognophos) annubilata* (Christoph, 1885)

Original reference: *Gnophos annubilata* Christoph, 1885, [in] Romanoff, Mém. lépid. 2: 103-104, pl.v fig.7. Type ♂: [Georgia]: "Khotchaldagh, près de Lagodekhi".

Synonym: *annubilata* Christoph, 1885

Range: Turkey (Rize, Siirt [Seven, 2018], Van, Şırnak [present records]), Caucasus countries, Iran.

Material examined: 1♂. **Şırnak** Prov., Beytüşşebap, Taşarası 1085m, 5.iv.2013, GP2939♂, M.Kemal & A.Koçak leg.; 1♂ [presumably], Van Çatak, Saklıvadi 2030m (65Df) 8.ix.2016, A.Koçak leg.; 1♂. **Van** Pr., Erek Mt. 2130m, GP2947, 9.iv.2018, M. Kemal & A.Koçak leg.; 1♂ (presumably belong to this species), Van Pr. Gevaş, Artos Mt. 2000m (65Fp), 15.iv.2018, M.Kemal & A.Koçak leg.

Remarks: Seven (2018) reported this species from Siirt (Şirvan) in October (second generation?). The specimens collected from Şırnak and Van Provinces (see above) are both vernal (belong to the first generation). However, there is great differences between them externally on colourations and markings. Therefore, a molecular comparison among them is necessary.

8. *Charissa (Euchrognophos) dubitaria* (Staudinger, 1892)

Original reference: *Gnophos ? dubitaria* Staudinger, 1892, Dt. ent. Z., Iris 5: 192-193. Syntypes: [Iran]: Schahrud; [Türkei]: Mardin.

Synonym: *dubitaria* Staudinger, 1892

Range: Lebanon, Turkey (İçel, Kayseri, Mardin, Siirt, Van), Caucasus countries, Iran.

Material examined: 2♂. **Van** Pr., Tuşba, Ağartı, Gören Mt. 1835m (65Np6), 30.v.2014; 6♂. Van Pr., Bahcesaray, Upper Mukus valley 1840m (65Am4), 3.vi.2016; 2♂. Bahcesaray, Upper Mukus valley 1850m (65Am3), 10.vi.2016 and 24.vi.2016; 8♂. Bahcesaray, Upper Mukus Valley 1840m, 23.vi.2016; 3♂1♀. Bahcesaray, Upper Mukus Valley 1840m, 3.x.2016, GP2926♀; 1♂. Çatak, Saklıvadi 2030m, 8.ix.2016, all by M.Kemal & A.Koçak leg.

9. *Charissa (Euchrognophos) effendii* (Viidalepp & Piriev, 1993)

Original reference: *Euchrognophos effendii* Viidalepp & Piriev, 1993, Vestn. Zool. 1993 (4): 80-81.

Type ♀: Azerbaijan, Talysh, Zuvand, Kosmoljan 2000m., 19.09.1990

Synonym: *effendii* Viidalepp & Piriev, 1993

Range: Turkey (Erzurum), Caucasus countries (Bold systems).

10. *Charissa (Euchrognophos) mucidaria* (Hübner, [1799])

Original reference: *Geometra mucidaria* Hübner, [1799], Samml. eur. Schmett. 5: pl. 28 fig. 148.

Type: Europe.

Synonyms: *mucidaria* Hübner, [1799]; *herrichi* Oberthür, 1913; *nubilarius* Reisser, 1936

Range: North Africa, South Europe, Turkey (Muğla, Sivas), Caucasus countries (Bold Systems).

11. *Charissa (Euchrognophos) nannodes* (Wehrli, 1936)

Original reference: *Gnophos nannodes* Wehrli, 1936, Am. Papillons 1936: 151-152. Syntypes 9♂ 1♀: [Turquie]: "Wan...", 1900-2200m (ZSM).

Synonym: *nannodes* Wehrli, 1936

Range: Turkey (Van).

Material examined: 3♂ 4♀. Van Pr., Bahçesaray, Upper Mukus Valley 1840m (65Am4), 3.x.2016, GP2417♂, M. Kemal & A. Koçak leg. 3♂, collected by the authors from the same place but on 23.vi.2016, presumably belong to this species.

12. *Charissa (Euchrognophos) staudingeri* (Wnukowsky, 1929)

Original reference: *Gnophos dubitaria staudingeri* Wnukowsky, 1929, Zool. Anz. 83: 223 (nomen novum pro *graecaria* Staudinger, 1892 nec Stgr., 1871).

Synonyms: *graecaria* Staudinger, 1892 nec Stgr., 1871; *staudingeri* Wnukowsky, 1929

Range: Greece (Samos, Crete, Peloponese), Turkey (Bold Systems).

Remarks: This species is given from Greece. Besides, uppersides of two specimens (ex ZSM) are simply illustrated from Turkey in the Bold Systems.

13. *Charissa (Euchrognophos) subtaurica* (Wehrli, 1934)

Original reference: *Gnophos variegata* var. *subtaurica* Wehrli, 1934, Mitt. münch. ent. Ges. 24 (2): 54, pl. 1 figs. 25, 26. Syntypes 1♂ 1♀: [Türkei]: Marasch, Akbes; [Lebanon]: Beirut (ZFMK).

Synonyms: *#subtaurica* Wehrli, 1932; *subtaurica* Wehrli, 1934

Range: Greece, Turkey (Adana, Antalya, Diyarbakır (Hazro) (Kemal & Koçak, 2015), Hatay, İçel, Konya, Kahramanmaraş, Muğla; Amasya, Bursa, Siirt, Van records need confirmation), Middle East countries, Cyprus.

There are numerous specimens collected from southern Turkey, which can be confirmed as *subtaurica* or *staudingeri*. However, it is considered inconvenient to make a decision without molecular analyzing (GP2924♀, GP2925♀).

14. *Charissa (Euchrognophos) symmicta* Wehrli, 1953

Original reference: *Gnophos symmicta* Wehrli, 1953, [in] Seitz, A., Die Gross-Schmett. Erde 4 (Suppl.): 604. Syntypes 1♂ 1♀: [Russia]: North Caucasus: Mashuk, River Zeja (ZFMK).

Synonym: *symmicta* Wehrli, 1953

Range: Caucasus countries, Turkey (Artvin, Bolu) (Bold Systems; Özdemir (2007)).

15. *Charissa (Kemtroglyphos) ambiguata* (Duponchel, 1830)

Original reference: *Gnophos ambiguata* Duponchel, 1830, Histoire naturelle des lépidoptères ou papillons de France 8 (1): 223-224, pl. 186 fig. 2. Type: France: Basses-Alpes.

Synonyms: *ambiguata* Duponchel, 1830; *meyeraria* Harpe, 1853; *ophthalmicata* Lederer, 1853

Range: Europe, Caucasus countries, Turkey (Amasya [Staudinger, 1879: 456], Çanakkale, Kırklareli), China, Mongolia (Bold Systems).

16. *Charissa (Kemtroglyphos) argillata* (Brandt, 1938)

Original reference: *Gnophos argillata* Brandt, 1938, Ent. Rdsch. 55: 620-621, fig. 415. Syntypes: Iran, [Fars]: Comée.

Synonym: *argillata* Brandt, 1938

Range: Iran, Turkey (Van) (present record)

Material examined: 1♂. **Van** Pr., Bahçesaray, Liman Populetum 2320m (65Ac3), GP2934♂, 16.vii.2017; 1♂, from same place, 6.viii.2016; 2♂, Bahçesaray, Krapet Pass 2820m, 6.viii.2016, M.Kemal & A.Koçak leg.

Remarks: This species looks very much like to *ardinaria* not only from external, but also from male genitalia. However, it is distinguishable by the short cornutus (less than 1/2 of aedeagus length). This species is presumably found also from Çatak: Saklıvadi (2♂1♀), and Gürpınar: Zerneke (1♂1♀) in Van Province.

New for the fauna of Turkey.

17. *Charissa (Kemtrognophos) ciscaucasica* (Rjabov, 1964)

Original reference: *Gnophos ciscaucasica* Rjabov, 1964, [in] Rjabov & Vardikjan, Zool. Sb. Erevan 13: 116-118, figs.

Synonym: *ciscaucasica* Rjabov, 1964

Range: Caucasus, Turkey (Antalya, Artvin, Erzurum, Kars, Rize, Ardahan), Iran, Turkmenistan.

Remarks: This species is apparently confined to Caucasus and NE Turkey (Bold Systems). Antalya record needs confirmation.

18. *Charissa (Kemtrognophos) mardinaria* (Staudinger, 1901)

Original reference: *Gnophos obscuraria* var. *mardinaria* Staudinger, 1901, Cat. Lep. palaearkt. Faunengeb. 3 (1): 345, nr.3931d. Type(s): [Türkei]: Mardin.

Synonym: *mardinaria* Staudinger, 1901

Range: Turkey (Kayseri, Mardin, Siirt; Malatya, Niğde, Van [present records]), North Iraq, Iran.

Material examined: 1♂. **Niğde** Pr., Aladağlar, Cimbar 1660m, GP707♂, A.Koçak leg. & prep. 1985; 1♀, **Malatya** Pr., Beydağı NP 1195m (44Lc), 20.vi.2015; 1♀, **Van** Pr., Bahçesaray, Upper Mukus Valley 1840m (65Am4), 3.x.2016; 2♂, Van Pr., Çatak, Saklıvadi 2030m (65Df), GP2416♂, 8.x.2016, M.Kemal & A.Koçak leg.

19. *Charissa (Kemtrognophos) onustaria* (Herrich-Schäffer, [1852])

Original reference: *Gnophos onustaria* Herrich-Schäffer, [1852], Syst. Bearb. Schmett. Eur. 6:73, figs. 496-497. Syntypes: [Türkei]: Amasia.

Synonyms: *onustaria* Herrich-Schäffer, [1852]; *oneraria* Guenée, [1858]

Range: South Europe, Turkey (Amasya, Antalya, Bolu, Bursa, Hatay, Kahramanmaraş, Ordu [Özdemir, 2016], Trabzon, Zonguldak; Elazığ, Siirt, Malatya, Van [present records]), Middle East and Caucasus countries. Iraq, Iran.

Material examined: 1♂ **Elazığ** Pr. (Maden), GP724♂, A.Koçak leg. & prep. 1985; 1♀. **Siirt** Pr., Pervari, Kırıkkaya 1155m (56Dd), 13.iv.2013; 1♀. Siirt Pr., Şirvan, Nergisli 630m (56Fv), 18.iv.2015; 3♂. Şirvan Maden kvş. 960m (56Fb), 17.iv.2015; 3♂. **Malatya** Pr. Beydağı NP 1193m (44Lc), 27.iv.2015; 5♂1♀. **Van** Pr., Gevaş, Göründü N. 1800m, Quercetum, 5.v.2016, GP2933♂; 1♂. Bahçesaray, Vasting 1615m (65An), 9.v.2016; 2♂. Bahçesaray Paşaköy 1600m (65Ai), GP2932♂, 25.v.2016 and 2.vi.2016, all M.Kemal & A.Koçak leg.

20. *Charissa (Kemtrognophos) zeitunaria* (Staudinger, 1901)

Original reference: *Gnophos obscuraria* var. *zeitunaria* Staudinger, 1901, Cat. Lep. palaearkt. Faunengeb. 3 (1): 344, nr.3931c. Type(s): [Türkei]: "Taur.m.or." [=Kahramanmaraş, Süleymanlı (=Zeitun)].

Synonym: *zeitunaria* Staudinger, 1901

Range: Turkey (Ankara, Bitlis [present record], Çankırı, Erzurum, Içel, Konya, Kahramanmaraş, Niğde [present record], Van [present record], Kırıkkale), Caucasus countries.

Material examined: 1♂. **Niğde** Pr., Aladağlar, Cimbar 1660m, GP736♂, A.Koçak leg. & prep. 1985; 1♂. **Van** Pr., Çatak, Saklıvadi 2030m (65Df), GP2411♂, 28.viii.2016, M. Kemal & A.Koçak leg. The genitalia was illustrated by Kemal & Koçak (2017: 43, fig.39); 73♂. **Bitlis** Pr., Adilcevaz, Süphan Mt. Kızıdağı 2560m (13Ac1), GP2747♂, 19.viii.2017, M.Kemal, H.Uçak & A.Ö.Koçak leg.; 1♂. **Içel** Pr., Anamur, Çiçekyurdu 1620m (33Ae), GP2761♂, 10.ix.2017, M.Kemal & A.Koçak leg. The male genitalia was illustrated by Kemal & Koçak (2018: 12, fig.27). Further material: 2♂2♀. Içel Pr. Anamur, Çiçekyurdu 1620m, 10.ix.2017, all M.Kemal & A.Koçak leg.

21. *Charissa (Neognophina) pfeifferi* (Wehrli, 1926)

Original reference: *Gnophos pfeifferi* Wehrli, 1926, Mitt. münch. ent. Ges. 16: 95-98. Syntypes 3♂ 2♀: [Turkey: Isparta Pr.]: "Egerdir, Anatolien" [it belongs to first generation].

Synonym: *pfeifferi* Wehrli, 1926

Range: Greece, Lebanon, Turkey (Isparta, İçel [present record], Konya, Kahramanmaraş, Karaman).

Material examined: 7♂. İçel Pr., Anamur, Kaşyaylası Çiçekyurdu 1620m (33Ae), GP2946♂, 10.ix.2017, M.Kemal & A.Koçak leg.

Remarks: Between first and second generation of *Charissa pfeifferi* no remarkable difference observed.

22. *Charissa (Neognophina) sp.*

Material examined: 1♂. Malatya Pr., Beydağı NP 1190m (44Lc), GP2944♂, 26.iv.2015, M.Kemal & A.Koçak leg.

Remarks: A single male obtained belongs to the vernal generation. The male genitalia looks like *Charissa pfeifferi*; however, the underside markings are remarkably different. A molecular comparison is needed.

23. *Charissa (Organognophos) wanensis* (Wehrli, 1936)

Original reference: *Gnophos wanensis* Wehrli, 1936, Mitt. münch. ent. Ges. 26: 36, Taf.ii. figs. 4,8. Syntypes 4♂ 3♀: [Türkei]: "Umğ. Wan, 2400m Ende August, Anf. September".

Synonym: *wanensis* Wehrli, 1936; *vanensis* Wehrli, 1953

Range: North Iraq, Turkey (Ağrı; Bitlis, Niğde, Van [present records]).

Material examined: 1♂. Niğde Pr., Aladağlar, Cimbar 1660m, GP722♂, A.Koçak leg. & prep. 1985; 1♂. Bitlis Pr., Adilcevaz, Süphan Mt. Kızdağı 2560m (65Ac1), 19.viii.2017, M.Kemal, A.Koçak & H.Uçak leg.; 1♂. Van Pr., Bahçesaray, Upper Mukus Valley 1840m (65Am4), GP2386♂, 3.x.2016, M.Kemal & A.Koçak leg. Kemal & Koçak (2017: 44, fig.62); 1♂, Çatak, Saklıvadi 2030m (65Df) 28.viii.2016, A.Koçak leg.

24. *Charissa (Rhopalognophos) glaucinaria* (Hübner, [1799])

Original reference: *Geometra glaucinaria* Hübner, [1799], Samml. Eur. Schmett. 5: pl.28 fig.150. Type: Europa.

Synonyms: *glaucinaria* Hübner, [1799]; *glaucinata* Treitschke, 1827

Range: South Europe, Turkey (Amasya, İçel) (Staudinger, 1879: 456). The occurrence of this species in Turkey needs confirmation.

25. *Charissa (s.str.) certhiata* (Rebel & Zerny, 1931)

Original reference: *Gnophos certhiatus* Rebel & Zerny, 1931, Denkschr. Akad. Wiss. 103: 115-117, figs.1,2,5. Syntypes: Albanien, Montenegro, Herzegowina, Bosnien.

Synonyms: *certhiatus* Rebel & Zerny, 1931; *bezengi* Niesiolowski, 1953; *certhiana* Rjabov, 1964

Range: South – East Europe, Caucasus countries, Turkey (Konya (Akşehir); Niğde, Van [present records]).

Material examined: 1♂. Niğde Pr., Aladağlar, Cimbar 1660m (51Bc), GP711♂, A.Koçak leg. & prep. 1985; 1♂. Van Pr., Gevaş, Artos Mt. 2000m (65Fp), 17.viii.2012, M.Kemal & A.Koçak leg.; 2♂, Bahçesaray: Krapet Pass 2820m, 6.viii.2016, GP2412♂, GP2936♂, M.Kemal & A.Koçak leg.

Remarks: The subspecific identity of this species is still uncertain. We need new material of *minorasiatica*, described by Wehrli (1936) as a subspecies from Akşehir (Sultandağları), for molecular comparison.

26. *Charissa (s.str.) obscurata* ([Denis & Schiffermüller], 1775)

Original reference: *#Geometra obscurata* [Denis & Schiffermüller], 1775, Ankündigung syst. Werkes Schmett. Wienergegend: 108. Type(s): [Austria]: Vienna district [nomen nudum].

Synonyms: *#obscurata* [Denis & Schiffermüller], 1775; *lividata* Fabricius, 1787 nec Cl., 1759; *obscuraria* Hübner, 1799; *anthracinaria* Esper, 1801; *quadripustulata* Donovan, 1808

Range: North Africa, Europe, Caucasus countries, Turkey (Amasya, Bolu, Bursa, Çanakkale, Edirne, İçel, Istanbul, Konya, Düzce) (Staudinger, 1879).

27. *Charissa (s.str.) zejae* (Wehrli, 1953)

Original reference: *Gnophos certhiathus* ssp. *zejae* Wehrli, 1953, [in] Seitz, A., Gross-Schmett. Erde 4 (Suppl.): 584, fig. 48e. Type: [Armenien]: Fluß Zeja, leg. Rjabov (ZIN, St Petersburg).

Synonym: *zejae* Wehrli, 1953

Range: Turkey (Erzurum), Caucasus countries (Bold Systems).

28. *Charissa* sp.n.

Material examined: 9♂2♀. **İçel** Pr., Anamur, Çiçekyurdu 1620m (33Ae), GP2843♂, GP2924♀, 10.ix.2017, M.Kemal & A.Koçak leg.; 1♂, collected from **Van** Pr., Bahçesaray, Upper Mukus Valley 1840m (65Am4), on 5.viii.2016, presumably belong to this species.

Remarks: The taxonomic status of this species is uncertain. Morphologically it belongs to *Charissa* Curtis temporarily. See above, phylogenetic remarks no 3.

29. *Gnophos (Dicrognophos) amanensis* Wehrli, 1934

Original reference: *Gnophos snelleni* ssp. *amanensis* Wehrli, 1934, Mitt. münch. ent. Ges. 24: 50. Syntypes 2♂: [Türkei, Osmaniye]: DülDül Dagh.

Synonym: *amanensis* Wehrli, 1934

Range: Turkey (Osmaniye, Hatay [present record]).

Material examined: 1♂. **Hatay** Pr., Samandağ, Meydan, Karabucak (31Ka3), 9.v.2015, M.Kemal, A.Koçak, O.Sertel & H.Barkou leg.; 1♂, from same place, Fenk altı (31Ka6), GP2406♂, 10.vi.2015, O.Sertel leg.

30. *Gnophos (Dicrognophos) gorgatus* Brandt, 1938

Original reference: *Gnophos gorgata* Brandt, 1938, Ent. Rdsch. 55: 617-620, figs. 404-408. Syntypes: Iran: [Fars]: Comée, Sine-Sefid.

Synonym: *gorgata* Brandt, 1938

Range: Turkey (Van [present record]), Iran.

Material examined: 1♂. **Van** Pr., Bahçesaray, Paşaköy 1600m, 25.vi.2016, M.Kemal & A.Koçak leg. GP2927♂, GP2928♀.

31. *Gnophos (Dicrognophos) pseudosnelleni* Rjabov, 1964

Original reference: *Gnophos pseudosnelleni* Rjabov, 1964, [in] Rjabov & Vardikjan, Zool. Sb. Erevan 13: 108, pls. Holotype ♂: Armenia: River Arpa, Daralagez.

Synonym: *pseudosnelleni* Rjabov, 1964

Range: Caucasus countries, Turkey (Siirt, Tunceli; Bitlis, Van [present records]), Iran.

Material examined: 1♂2♀. **Bitlis** Pr. Tatvan, Nemrut Caldera 2350m, 24.vii.2008, L.Kayci & H.Özkol leg.; 11♂. **Van** Pr., Bahçesaray Upper Mukus Valley 1840m (65Am4) 23.vi.2016; 1♂1♀, from same place 1840m (65Am4), 5.viii.2016; 1♀, from same place 1780m (65Am1), 6.vii.2016; 2♂, from same place, 1850m (65Am3), 24.vi.2016; 6♂1♀. Bahçesaray, Paşaköy 1620m, 25.vi.2016; 1♂, Bahçesaray Liman Populetum 2320m, 6.viii.2016, 3♂, from same place, GP2929♂, 16.vii.2017; 4♂1♀. Bahçesaray, Altındere 1935m (65At5) 4.vii.2016; 8♂1♀. Başkale, Ziyaniş E. 2400m (65Bo) 9.vii.2015; 1♂ (GP2403) Çatak, Saklıvadi 2030m (65Df) 12.vii.2016; 5♂1♀ from same place 2030m (65Df) 25.vi.2017; 1♂, Gürpınar, Zerneş 1975m (65Gb), 20.vii.2017, all by M.Kemal & A.Koçak leg.

32. *Gnophos (Dicrognophos) sartatus* Treitschke, 1827

Original reference: *Gnophos sartata* Treitschke, 1827, Schmett. Eur. 6 (1): 175-177. Syntypes ♂♀: [Croatia]: "Dalmatien".

Synonyms: *sartata* Treitschke, 1827; *syriaca* Thierry-Mieg, 1916.

Range: Europe, Caucasus & Middle East countries, Iran, Cyprus, Turkey (Amasya, Ankara, Bursa, Çanakkale, Denizli, Diyarbakır(Hazro) (Kemal & Koçak, 2015), Gaziantep, Hatay, Konya, Kahramanmaraş, Siirt, Van, Osmaniye) (Staudinger, 1879: 455).

Material examined: 1♂. **Diyarbakır** Pr., Hazro, Uzunargıt 950m, 16.v.2015, GP2192, M.Kemal & A.Koçak leg.; 2♂. **Hatay** Pr., Samandağ, Karabucak 35m (31Ka3) 9.v.2015 and 12.v.2015; 2♂, same place Gözlüce 35m (31Ka5) 11.v.2015, M.Kemal A.Koçak, O.Sertel, H.Barkou leg.; 1♂, Meydan, Fenkaltı 10.x.2015, O.Sertel leg.; 2♂. **Van** Pr., Bahçesaray, Upper Mukus Valley 1840m (65Am4)

23.vi.2016 & 3.x.2016; 1♂, Bahçesaray, Paşaköy 1600m (65Ai), 25.vi.2016, 1♀, same place, 2.x.2016; 1♀, Bahçesaray, Su Fabrikası 1570m (65Aö), 22.x.2016, M.Kemal & A.Koçak leg.

33. *Gnophos (Dicrognophos) snelleni* Christoph, 1887

Original reference: *Gnophos snelleni* Christoph, 1887, [in] Romanoff, Mém. lépid. 3: 96-98, pl. iv fig. 13. Syntypes: [Turkmenistan]: "Germob"; [Iran]: "Schahrud".

Synonym: *snelleni* Christoph, 1887

Range: Turkmenistan, North Iran, Iraq. Record from Turkey needs confirmation.

34. *Gnophos (Sacrognophos) sacrarius* Staudinger, [1895]

Original reference: *Gnophos sacraria* Staudinger, [1895], Dt. Ent. Z., Iris 7: 292-293.

Syntypes: 3♂8♀. [Israel]: Jerusalem (Paulus leg.).

Synonym: *sacraria* Staudinger, [1895]

Range: Israel, Turkey (Siirt) (Seven, 2018).

35. *Gnophos (s.str.) obfuscatus* ([Denis & Schiffermüller], 1775)

Original reference: #*Geometra obfuscata* [Denis & Schiffermüller], 1775, Ankündigung syst. Werkes Schmett. Wienergegend: 108. Type(s): [Austria]: Vienna district. [nomen nudum]

Synonym: #*obfuscata* [Denis & Schiffermüller], 1775

Range: Europe, Caucasus countries, Turkey (Istanbul, Ordu) (Özdemir, 2016).

36. *Charissa ? pallescens* (Rjabov, 1964) (comb.n.?)

Original reference: *Gnophos pallescens* Rjabov, 1964 [in] Rjabov & Vardikjan, Zool. Sb. Erevan 13: 113-115, figs. Type ♂: Russia, Daghestan.

Synonym: *pallescens* Rjabov, 1964

Range: Caucasus countries, Turkey (Kahramanmaraş: Nurhak) (Bold Systems).

37. *Odontognophos zacharius* (Staudinger, 1879)

Original reference: *Gnophos zacharia* Staudinger, 1879, Horae Soc. ent. ross. 14: 454-455. Type ♀: [Türkei]: Amasia.

Synonym: *zacharia* Staudinger, 1879

Range: Caucasus countries, Turkey (Adana, Amasya, Bolu, Hatay, Konya, Kahramanmaraş, Kırıkkale, Niğde, Van [last two provinces are present records]).

Material examined: 1♂. Niğde Pr., Aladağlar, Cimbar 1660m, GP739♂, A.Koçak leg. & prep. 1985; 1♂. Van Pr., Çatak, Saklıvadi 2030m. (65Df), GP2416♂, Kemal & Koçak (2017: 45, fig. 66); 2♂1♀, Bahçesaray, Paşaköy 1620m (65Ai), 2.x.2016; 1♀, Bahçesaray, Upper Mukus Valley 1840m (65Am4), 3.x.2016, M.Kemal & A.Koçak leg.

Remarks: *Odontognophos* was established by Wehrli (1951) as a distinct genus. However, its type-species *dumetata* Treitschke is considered as a *Gnophos* species by some authors (Lepiforum).

Conclusions

In general, much more material from all parts of Turkey is needed for further faunistical information about the *Gnophini*.

Taxonomically, there are species which appear to be undescribed. In order to clarify their precise identity, further studies are needed, molecular assisted.

For the time being, the status of the following taxa are briefly mentioned below:

The genital morphology of *Charissa (Neognophina)* sp. similar to *pfeifferi*, however, the underside markings are remarkably different from it. Therefore, it could not be decided about its specific identity. More material from the region and also a molecular comparison is needed for the precise identification.

The subspecific identity of *Charissa certhiata* in East Turkey is uncertain. We need new material of *minorasiatica*, described by Wehrli (1936) as a subspecies from Akşehir (Sultandağları), for molecular comparison.

The taxonomic status of *Charissa* sp. n. is currently uncertain. In order to clarify its status, more material from various parts of Turkey and morphological researches, molecular assisted, are needed.

Morphologically, still unidentified specimens may be classified under two following *Charissa* taxa:

Charissa sp.1

3♀. Siirt Pr., Şirvan, Nergisli 630m, 18.iv.2015;

1♀. Siirt Pr., Şirvan, Maden Pass SW (56Fm), 19.iv.2015;

1♂. Siirt Pr., Şirvan, Maden kvş. (56Fb), 17.iv.2015 (GP2945♂);

1♂. Malatya Pr. Beydağı NP 1190m (44Lc), 26.iv.2015, all by M.Kemal & A.Koçak leg. The genital morphology resembles to *subtaurica*; however, all *subtaurica* populations need molecular analysis.

Charissa sp.2

1♂. Hakkari Pr., Dağlıca 1545m (30Df), 23.vii.2017, H.Uçak leg.

In the present paper, there are several names of various taxa, which is nomenclaturally unavailable according to the current ICZN Rules. If the truths need to be discussed, not the applications, the following unavailable names must be cited:

Geometra furvata [Denis & Schiffermüller], 1775

Geometra obscurata [Denis & Schiffermüller], 1775

Geometra obfuscata [Denis & Schiffermüller], 1775

These names are binominal, however, they havenot been described originally; therefore they must be considered as *nomina nuda* (Koçak, 1982-1987).

Finally, *Hyposcotis* Hübner, [1825] has been established availably earlier than *Charissa* Curtis, 1826. On the other hand, it has still priority over the name *Euchrognophos* Wehrli, 1951. The type-species of both generic names are currently congeneric, i.e., *Euchrognophos* Wehrli (type-species: *Gnophos variegata* Dup.), *Hyposcotis* Hübner (type-species: *Geometra mucidaria* Hbn.).

Faunistically, *Charissa* (*Neognophina*) sp. is temporarily placed in the faunal list. Separately, *Charissa* (*Rhopalognophos*) *glaucinaria* and *Gnophos* (*Dicrognophos*) *snelleni* need confirmation for the fauna of Turkey.

The present study is an initiary one on this group. Further studies on the fauna, taxonomy on the problematic groups have already been planned. As the currently obtained taxonomical and molecular information are not final, but interim results; they will not be shared until our research about this group ends.

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